

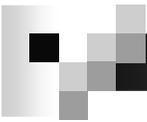
# **Users, Usability, and You**

**Federal Web Content Managers Conference**

Wednesday, April 27, 2005

**Jean Fox, BLS**

**Janice R. Nall, GSA**



# Why Is Usability Important to Government Online Services?

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- n The Federal Government is the largest single producer, collector, consumer, and disseminator of information in the United States.
- n Government provides critical information...benefits, health info, safety alerts, commerce, education...
- n 97 million adult Americans, or 77% of Internet users, took advantage of e-gov in 2003, whether that meant going to government websites or emailing government officials. This represented a growth of 50% from 2002. (*Pew Internet in American Life, 2003*)



# Why Now? Why Me/You?

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- n Government sites are heavily visited...and will be more visited in the future. More visits = more work, questions, emails, complaints, calls, etc. if the site isn't working.
- n Users will begin to see commonality on Federal sites...you will be asked to implement additional policies.
- n Federal web developers will be held to higher standards...is the site really better or just different...how can you prove it?
- n Resources are diminishing...we're all being asked to more with less.
- n You care about your users' experiences on your site.





# Federal Efforts In Process

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- n It is essential that Government minimize the Federal paperwork burden on the public, minimize the cost of its information activities, and maximize the usefulness of government information. (*OMB Circular A-130, Management of Federal Information Resources*)
- n Increasing focus on performance, metrics, data to support programs, technology, agency mission. (*Government Performance and Results Act of 1993*)
- n The Federal Government is in the process of establishing specific requirements for Internet-based information technology to enhance citizen access to government information and services. (*E-Government Act of 2002*)
  - Interagency Committee on Government Information – establishing policies on web content, search/taxonomy, and electronic record-keeping



# Why We Do It

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- n 62% of web shoppers gave up looking for an item. *(Zona study)*
- n 50% of web sales are lost because visitors can't easily find content. *(Gartner Group)*
- n 40% of repeat visitors do not return due to a negative experience. *(Zona study)*
- n 85% of visitors abandon a new site due to poor design. *(cPulse)*
- n Only 51% of sites complied with simple web usability principles. *(Forrester study of 20 major sites)*



# Why We Do It

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## **Forrester Review of 125 Websites (2003)**

- ⌘ 78% failed to provide adequate search results.
- ⌘ 66% failed to provide in-depth overview of site contents on the home page.
- ⌘ 64% ineffectively use of space on page layout.
- ⌘ 54% were not accessible.
- ⌘ 50% used text that was illegible.



# Why We Do It

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## n **Usability Engineering Works**

- ⌘ It's user-centric (not developer-centric)
- ⌘ It's based on data, not opinions
- ⌘ It's testable and verifiable
- ⌘ It's performance-driven
- ⌘ Saves money and time

## n **Research-based Information Design Works**

- ⌘ Removes much of the controversy in opinion
- ⌘ Performance oriented – measurably better/faster/etc.
- ⌘ Takes the guesswork out – allows you to focus on what you don't know – to solve problems



# What Is Usability?

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- n **Usefulness**

- ⌘ Degree to which users can successfully achieve goals/complete tasks

- n **Effectiveness**

- ⌘ Ability of users to accomplish goals with speed & ease

- n **Learnability**

- ⌘ Ability to operate the system to some defined level of competence after some predetermined amount of training

- n **Satisfaction**

- ⌘ Attitude of users, including perceptions, feelings and opinions of the product



# What Is Usability Engineering?

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- n An evidence-based methodology that involves end users throughout the development process to produce information systems that are measurably easier to use, learn, and remember
- n Usability Engineering involves:
  - ✧ Collecting data about users' needs/wants/behaviors
  - ✧ Developing prototypes
  - ✧ Evaluating the prototypes
  - ✧ Designing and testing iteratively



# Usability Engineering (UE) is NOT

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- n Usability testing just before deployment
- n Simply applying guidelines during design
- n Conducting evaluations without incorporating recommendations
- n Any individual usability method on its own



# Usability is NOT

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- n A nebulous, vague construct
- n Merely cosmetic
- n A property inherent in a product
  - It depends on the users, tasks, and work environments



# Other Terms to Know

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- n User-Centered Design
- n Ergonomics
- n User Interface Design
- n Human-Computer Interaction
- n Human Factors
- n Engineering Psychology



# Fitting UE into Development

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- n It's easy!
- n A trained Usability Professional can work within the project schedule.
- n There are different methods for different phases of development.
- n It can save time and money by preventing significant investment in poor designs.



# Sample Usability Methods

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- n User and Task Analyses
- n “Contextual Inquiry”
  - α Observations of users in their natural setting
- n Focus Groups
- n Interviews
- n Expert Reviews
- n Usability Tests



# Strategies for Success

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## n For Management

- ⌘ Gain support of Sr. Management and Project Leaders.
- ⌘ Use an iterative development process.
- ⌘ Include usability throughout a project, not just at the end.
- ⌘ Work with trained usability professionals.
- ⌘ Encourage information sharing (esp. “marketing” type groups with access to user information)

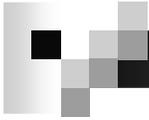


# Strategies for Success

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- n For Usability Professionals
  - ⌘ Start with a small usability effort.
  - ⌘ Identify solutions, not just problems.
    - n Consider limitations when recommending solutions
  - ⌘ Consider all user populations.
  - ⌘ Participate as an equal team member, not a consultant.
  - ⌘ Have team members watch usability tests.
  - ⌘ Address all components, including manuals & training.





# Usability Engineering Process

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- n Steps in the process
  - α Plan
  - α Design
  - α Test
  - α Refine
    - n Test
    - n Refine
    - n Test
    - n Refine...



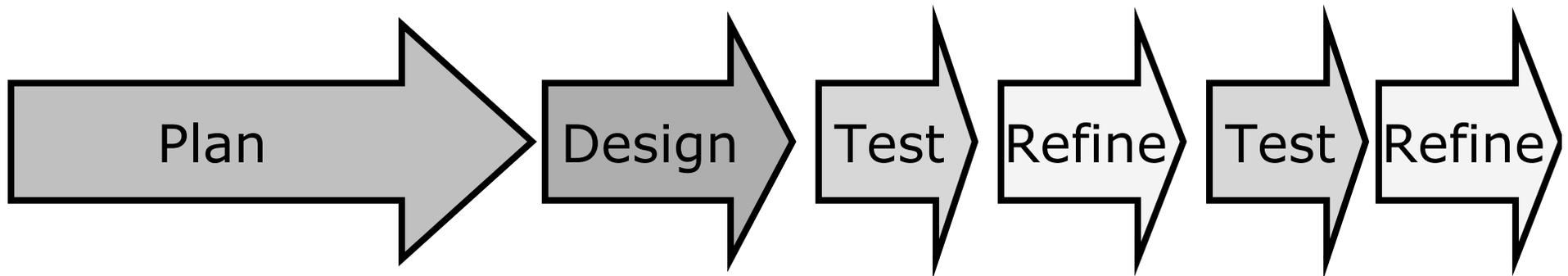
# Traditional Development Process





# User-Centered Design Process

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# Planning

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## n Planning Steps

- q Define purpose / vision for the site
- q Develop business objectives
- q Define audiences & goals
- q Conduct task analysis
- q Determine measurable usability objectives
- q Discuss expectations, requirements & preferences
- q Timeline and project plan



# Planning: Site Purpose & Goals

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“Although the needs of the user and the organization are connected, each has a different point of view. Each point of view must be honored and satisfied.”

John Cato  
User-Centered Web Design

Two main aspects of a web site

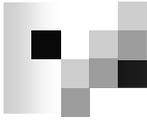
- ⌘ What use is it to the organization?
- ⌘ What use it is to the user?



# Planning: Site Purpose & Goals

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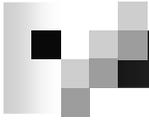
- n What is the purpose of the site?
  - α Why are we building a site?
  - α What are the goals of the site?
- n Why are we developing a web site?
  - α What does success look like?
  - α How will we know when we have been successful?
- n How would you describe the site?
  - α From an organization's viewpoint?
  - α From a user's viewpoint?



# Planning: Site Purpose & Goals

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Organization's Purpose	Visitor's Purpose
<ul style="list-style-type: none"><li>n To promote awareness.</li><li>n To reduce support calls.</li></ul>	<ul style="list-style-type: none"><li>n To get information.</li><li>n To answer a question.</li></ul>
<ul style="list-style-type: none"><li>n To improve employee communication</li></ul>	<ul style="list-style-type: none"><li>n To get work done fast.</li></ul>
<ul style="list-style-type: none"><li>n To sell merchandise.</li></ul>	<ul style="list-style-type: none"><li>n To learn about products.</li><li>n To purchase products.</li><li>n To comparison shop.</li></ul>



# Planning: Site Purpose & Goals

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n Good Example: Walmart.com Gardening Center

Organization's Purpose	Visitor's Purpose
n To sell plants.	n To get information. n To learn about products.

Walmart.com - Garden - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail News RSS

Address [D:\Car's Web Pages\Walmart\\_com - Garden.htm](#)

Google Search Web Search Site 155 blocked Options

Search Garden & Patio for: Find

You are here: [Home Page](#) > [Garden](#) > [Learning Center](#) > Advanced Plant Finder

**Learn About Gardening**

**Care Guides**

- [Annuals Care Guide](#)
- [Fresh Cut Flowers Care Guide](#)
- [Ground Covers Care Guide](#)
- [Heaths & Heathers Care Guide](#)
- [Houseplants & Tropicals Care Guide](#)
- [Perennials Care Guide](#)
- [Roses Care Guide](#)
- [Scented Geraniums Care Guide](#)
- [Summer & Fall-Blooming Bulbs Care Guide](#)
- [Trees & Shrubs Care Guide](#)
- [Water Gardens Care Guide](#)

**Articles**

- [Dividing Daffodils in 5 Easy Steps](#)
- [In Love With Lavender](#)
- [Kitchen Gardening](#)
- [Late-Season Vegetables](#)
- [Never-Fail Bulb Gardens](#)
- [Peony Perfection](#)
- [Romance of the Rose](#)
- [Sensational Water Gardens](#)
- [Top 10 Bulb Care Tips](#)
- [12 Classic Bulbs](#)
- [The Wonder of Water Plants](#)

**Garden Troubles?**

- [Garden Doctor](#)

**Shop for Garden Supplies**

- [Plants & Bulbs](#)
- [Patio & Grilling](#)
- [Power Equipment](#)
- [Tools & Supplies](#)
- [Outdoor Decor](#)
- [Fresh Cut Flowers](#)
- [Garden Books & Magazines](#)

**For Detailed Search Results, Use Our**

## Garden Center

### Advanced Plant Finder

**Climate Zone**

To learn more about plants that thrive in your climate zone, enter your ZIP code:

Use our Advanced Plant Finder below for more detailed results. The more information you enter, the more detailed your results will be. You can also search by plant name only.

**1. Select the types of plants and level of care**

**Plant name:** (Example: Daisy)

**Level of care:**

**Plant type:**

Annuals     Herbs     Roses

Bulbs     Orchids     Trees & Shrubs

Vegetables     Perennials     Fruit, Nuts & Berries

**2. Select your garden environment**

**ZIP code:** (please enter your ZIP code and we'll find your climate zone)

**Sun exposure:**

**Planting season:**

**Blooming season:**

**3. Select your flower and foliage preferences**

**Flowering plants:**

**Flower colors:**

**Foliage colors:**

**4. Select other plant and soil characteristics**

**Maximum plant height:**

**Maximum plant width:**

**Other characteristics:**

Butterfly Attracting

Deer Resistant

**Soil moisture:**    **Soil composition:**

Start Microsoft PowerPoint - [...] Car's Web Pages Car's Web Pages Control Panel W

# Garden Doctor



Having trouble with pests? Curious about a specific garden subject? Search our library of common, garden-related questions and answers by entering a key word in the field below.

## RX in the Garden

Keep your garden healthy year round by following our monthly garden prescriptions:

- [January in the Garden](#)
- [February in the Garden](#)
- [March in the Garden](#)
- [April in the Garden](#)
- [May in the Garden](#)
- [June in the Garden](#)
- [July in the Garden](#)
- [August in the Garden](#)
- [September in the Garden](#)
- [October in the Garden](#)
- [November in the Garden](#)
- [December in the Garden](#)

### Climate Zone

To learn more about plants that thrive in your climate zone, enter your ZIP code:

### Plant Finder

Create a shopping list to take to your local Wal-Mart Garden Center by entering the plant name or other details below:

**Plant name (example: daisy):**

**Sun exposure:**  
Any

**Plant type:**  
Any

**Planting season:**  
Any

Please enter your ZIP code. We'll find your climate zone:

Want more detailed results? Try our [Advanced Plant](#)

# New York State

Governor Pataki man-NY e-bizNYS Citizen Guide Search Home

- Doing Business in NY
- Working in NY
- Learning in NY
- Outdoors in NY
- Living in NY
- Government in NY
- Healthcare in NY
- Visiting in NY
- Government Agencies in NY

## Welcome to New York



Governor George E. Pataki

[Click here to view the Commission on Education Reform Press Release](#)

[Click here to view Commission on Education Reform Report](#)

- Featured Links**
- [Click here to view Governor Pataki's 2004 State of the State Address](#)
  - [Click here to view Governor Pataki's 2004 Budget Address](#)
  -  **Department of Taxation and Finance - E-file/E-pay**
  - [Click here to view Governor Pataki's Address on Rebuilding Lower Manhattan.](#)
  - Governor George E. Pataki Realizing The Plan Ritz Carlton, Downtown / April 24, 2003**
  - New York State Constitution**
  - NYS Office of Public Security**
  - NYS Health Dept/State Police Bio-Terror Prevention Protocols**
  - Governor's Press Releases**
- NY Links**
- STAR - School Tax Relief**
  - High Tech NY**

# Planning: Site Purpose & Goals

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n **Not so good example: New York State Web Site**

Organization's Purpose	<del>Visitor's Purpose</del>
n To promote the governor.	<del>≠</del> ?
?	n To find info about the state.

**MARYLAND.GOV** Home Help FAQ Search

Advanced Search

EDUCATION	BUSINESS	TRAVEL & RECREATION	TAXES
FAMILY, HEALTH & SAFETY	MOTOR VEHICLES & TRANSPORTATION	CAREER OPPORTUNITIES & DEVELOPMENT	GOVERNMENT & ELECTIONS

- Quick Links**
- County Information
  - Events
  - Federal Government
  - History & Archives
  - Kid's Pages
  - Telephone Directory
  - Traffic
  - Weather
- ELEVATED**

**Agency Index**

Select Agency...

- News and Alerts**
- Governor Ehrlich Highlights 2004 Legislative Victories
  - New Freight Logistics Office Reflects Administration's Pro-Business Philosophy
  - Drinking and Driving Consequences The Order of the Day At



**Welcome to Maryland**

- Visit The Governor's Website
- Maryland's General Assembly & The 2004 Legislative Session
- FY 2005 Budget Highlights



**The Maryland Energy Administration**

Check out MEA's newly designed website to learn about Alternative Fuel Vehicles (AFV), discover the benefits of Maryland's Energy Star Program, or just have fun with a kid friendly interactive Energy Hog!

[Take me there ...](#)

[View Montage Gallery](#)

- Featured Links**
- [The Weekly Legislative Wrap Up \(pdf\)](#)
  - [Parents & Educators Expected at Family Involvement](#)

- Online Services by Category**
- Business
  - Career Opportunities and Development
  - Education
  - Family, Health and Safety
  - Government and Elections
  - Motor Vehicles and Transportation
  - Taxes
  - Travel and Recreation
- [View Alphabetical Index](#)
- Spotlight on eGov:**
- [Check Your Refund Status Online](#)
  - [Search for Undeliverable Refund Checks](#)
  - [Find A State Job](#)
  - [Real Property Database Search](#)
  - [Maryland E-ZPass - Enroll](#)

Commonwealth of Virginia



Enter search keyword Search

- Virginia Communities
- Family & Education
- Business and Employment
- Online Services
- Government
- Visiting Virginia
- Featured Sites
- About VIPNet

Live Help unavailable leave a message

The Live Help service requires advanced browser features to function. If your browser does not support the Live Help, you may still use our feedback link to contact the Commonwealth of Virginia Portal.

Online Services

Get online, not in line

- [Citizen Services](#)  
Virginia government services available to citizens.
- [Business Services](#)  
Virginia government services available to businesses.
- [PDA/Wireless Services](#)  
Virginia government services available on your PDA/Palm/wireless device.
- [Premium Services](#)  
Enhanced access services available to subscribers.

Virginia eGovernment

- [Wireless Web Survey](#)
- [Tax questions](#) through the the [Department of Taxation](#)
- [Health Professionals subscription notification service](#)
- [Tax Reform Calculator](#)
- [Health Professionals Online License Renewals](#)
- [Lobbyist-In-A-Box](#) and [free Bill Tracking Service](#)
- [Virginia Tourism](#) - Virginia's official travel and tourism Web site and [Online Store](#) for purchasing Virginia is for Lover's merchandise.
- [Buy your hunting and fishing licenses online](#) from the Department of Game and Inland Fisheries

Governor Mark Warner



Governor Warner's Web Site

Emergency Notifications

Emergency information, such as Homeland Security updates, storm warnings, drought information, War on Terrorism information, and other notices.

Personalized My Virginia Page

Create a personalized version of the My Virginia portal, with only the links you use. Or visit your existing page.



# Welcome to Florida

Home Find an Agency Contact Us 411 Site Map Help

Enter keywords:  SEARCH

Sun April 18 2004

- Visitor
- Floridian
- Business
- Government
- Get Answers

**Featured e-Government Services**

[View all e-Government Services](#)

**County Official Records Search**  
Visit MyFlorida communities to do everything from visiting county web sites to finding birth certificates.

**Digital Divide Council**  
Find out what digital divide/technology services are available in your city and around the state of Florida. You can also register your organization, technology center, school, company, or technology/digital divide initiative with us.

**Florida Homeland Security**  
Domestic Security News, Public Safety and Prevention Protocols.

**Governor's Initiatives**  
One Florida, Just Read, A+ Plan and more.

**High Tech Job Openings**  
Looking for a job in the high tech field? View high tech job listings in Florida by region.

**e-Gov Shortcuts**

Use these shortcuts to get key services and information in one click!

Visitor  GO

Floridian  GO

Government  GO

Business  GO

**Find Your Legislator**

Enter your zip code to find your legislators.

Zip code:

SEARCH

[Senators By County](#)

**Get Answers Now**

Search by selecting a general topic, specific keywords, or keywords within topic.

All Categories

SEARCH

**411 State Employee**

Search for a State of Florida Government contact or resources on a specific subject:

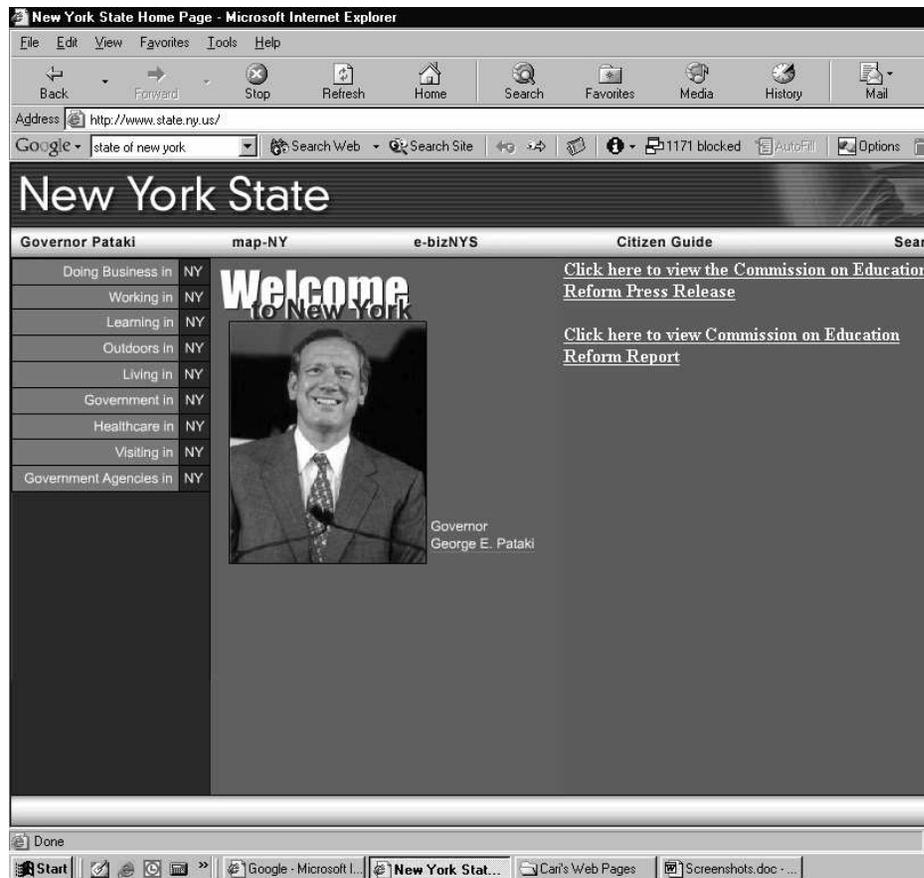
- Hot Topics**
- Florida's Voluntary Universal Prekindergarten Program
  - Florida Hospital Services Guide
  - Florida Guardsman Online
  - Florida Statewide Strategic Plan
  - Governors Task Force on Access to

**Governor's Office**

Contact Governor Bush

# Planning: Site Purpose & Goals

- n If it's not useful to users, it will never be used!





# Planning: Defining Users

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- n Who are we developing the site for?
  - α User Characteristics
    - n Who is the site for?
    - n What are the users like?
  - α Environmental Characteristics
    - § When/where will they access the site?
  - α Goal & Task Characteristics
    - n Why will they come to the site?
    - n What will they do on the site?





# Planning: Defining Users

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## User Needs, Interests, Goals

- n Why will users visit your site?
  - ⌘ To find information?
  - ⌘ To use functionality? (i.e. mortgage calculator)
  - ⌘ To purchase products?
  
- n What will users do on the site?
  - ⌘ Which tasks are the most important?
  - ⌘ Which tasks will users use the most? (frequency)



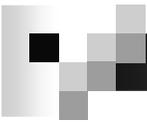
# Planning: Usability Objectives

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“It has long been said you cannot manage what you cannot measure. Nowhere is this more true than on the web – where examining what works and what doesn’t directly affects the bottom line.” *(Forrester Research)*

Usability objectives must be:

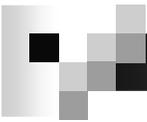
- ✧ Determined at the beginning of the project.
- ✧ Agreed upon by all team members.
- ✧ Written down; Referred to often.
- ✧ Measurable



# User Research: Gathering & Analyzing Data

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- n When you sit down at your first planning meeting, you are NOT going to have all the information you need about users, their characteristics and their goals.
- n In order to get this information, you will most likely have to do some research.
- n There are several types of research. You need to decide what type is best for your project, timeframe, budget, audience, etc.



# User Research: Gathering & Analyzing Data

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- n Methods of Data Collection
  - q Personal Interviews
  - q Contextual Inquiries
  - q Focus Groups
  - q Support Line/Phone Calls
  - q E-mail
  - q Web Logs
  - q Surveys
  - q Usability Testing

# User Research: Gathering & Analyzing Data

<b>"Which of the following best describes you?"</b>				
	<b>CancerNet</b>		<b>NCI</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Family/Friends</b>	<b>169</b>	<b>28</b>	<b>414</b>	<b>27</b>
<b>Cancer Patients</b>	<b>85</b>	<b>14</b>	<b>266</b>	<b>17</b>
<b>Educators/Students</b>	<b>-</b>	<b>-</b>	<b>155</b>	<b>10</b>
<b>Researchers/Scientist</b>	<b>41</b>	<b>7</b>	<b>97</b>	<b>6</b>
<b>Nurse (non-Oncology)</b>	<b>15</b>	<b>2</b>	<b>42</b>	<b>3</b>
<b>Oncology Nurse</b>	<b>14</b>	<b>2</b>	<b>34</b>	<b>2</b>
<b>Oncologist</b>	<b>60</b>	<b>10</b>	<b>33</b>	<b>2</b>
<b>Physician (non-Oncology)</b>	<b>22</b>	<b>4</b>	<b>32</b>	<b>2</b>
<b>Journalist/Media Professional</b>	<b>-</b>	<b>-</b>	<b>31</b>	<b>2</b>
<b>Librarian</b>	<b>29</b>	<b>5</b>	<b>30</b>	<b>2</b>
<b>Patient Advocate</b>	<b>8</b>	<b>1</b>	<b>26</b>	<b>2</b>
<b>Other</b>	<b>91</b>	<b>15</b>	<b>209</b>	<b>14</b>
<b>Not specified</b>	<b>81</b>	<b>13</b>	<b>157</b>	<b>10</b>
	<b>615</b>		<b>1526</b>	

# User Research: Gathering & Analyzing Data

<b>"What information are you looking for?"</b>			
<b>Major Categories</b>	<b>CancerNet</b>		<b>NCI</b>
<b>Information on specific type of cancer</b>	<b>23%</b>		<b>25%</b>
<b>Treatment information</b>	<b>19</b>		<b>17</b>
<b>Symptoms, causes, risk factors.....</b>	<b>8</b>		<b>5</b>
<b>Statistics (e.g. incidence rates, survival)</b>	<b>3</b>		<b>5</b>
<b>Clinical Trials</b>	<b>11</b>		<b>5</b>
<b>Access to other resources (e.g. treatment facilities, physicians)</b>	<b>3</b>		<b>4</b>
<b>Drug information</b>	<b>3</b>		<b>4</b>
<b>NIH Organization (e.g. mission, employment)</b>	<b>-</b>		<b>3</b>
<b>New treatments</b>	<b>5</b>		<b>3</b>
<b>Ordering NCI publications</b>	<b>2</b>		<b>3</b>
<b>Recent findings</b>	<b>-</b>		<b>2</b>
<b>Type of tumor (not by cancer name)</b>	<b>7</b>		<b>2</b>
<b>Cancer literature</b>	<b>5</b>		<b>1</b>
<b>Patient support</b>	<b>4</b>		<b>2</b>
<b>Side effects</b>	<b>3</b>		<b>2</b>



# Design

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- n Translating Data into Design
  - α User profiles
    - n List of user characteristics
  - α User personas
    - n Narrative of user characteristics
  - α Task lists
    - n Tasks ranked by importance, frequency, and feasibility
  - α Task matrix
    - n Tasks ordered by users
  - α Task flow
    - n Diagram of steps in a process

**User Profile for:** \_\_\_\_\_

**Age Range:** \_\_\_\_\_

**Ethnic Origins:** \_\_\_\_\_

**Income Level:** \_\_\_\_\_

**Occupation:** \_\_\_\_\_

**Gender:** \_\_\_\_\_

**Disabilities:** \_\_\_\_\_

**Highest Education**

- Ph.D
- Master's Degree
- Bachelor's Degree
- Associate Degree
- Other: \_\_\_\_\_

**Major**

- Example
- Example
- Example
- Example
- Other: \_\_\_\_\_

**Years of Experience**

- Less than 1 year
- 1 – 4 years
- 5 – 10 years
- 11 – 15 years
- More than 15 years

**Computer Experience**

- Novice
- Intermediate
- Advanced

**Internet Experience**

- Novice
- Intermediate
- Advanced

**Internet Usage**

- Daily
- Weekly
- Monthly

**Tasks a User Will Perform on the Site:**

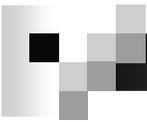
Tasks	Daily	Weekly	Monthly	Rarely
1. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**User Interests:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Additional Notes:**

\_\_\_\_\_



# Translating Data into Design

---

## User Personas



### Sarah Parker

Sarah is a Senior Marketing Specialist with seven years of experience planning health campaigns.

She works in a large office where she handles multiple projects. She is constantly busy and struggles with a limited budget.

Sarah can easily identify the steps necessary to carry out each project. She doesn't need help determining how to approach the planning process and mainly uses the various resources available as a reference.

Sarah would appreciate any tool or resource that could help her get her work done faster and more efficiently.

## Figure 5 Example Of Design Persona

### REBA COHEN



AGE: 28  
HOME: San Francisco

- Her efficient, no-nonsense attitude as a project manager extends to her shopping habits.
- Sticks to stores she knows and trusts, including favorites like Banana Republic, Anthropologie, Pottery Barn, and Nordstrom.
- Shops at stores near work on her lunch hour or on her way home.
- Has been an online buyer for a few years.
- Shops online from home, where she has a cable modem, and from work, where she uses the company's high-speed connection.

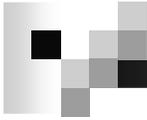
#### High-level goals:

- *Find and buy the perfect item.* Reba hates it when her purchase is not what she expected.
- *Use time effectively.* Reba doesn't want to be annoyed by pushy salespeople.
- *Create a lifestyle in her home.* Reba wants to craft a stylish interior for her house.

#### Some specific goals:

- Get new throw pillows that match her couch.
- Use the Web to buy Kenneth Cole shoes that were out of stock at the brick-and-mortar store near work.
- Check out without being asked to confirm 20 times.

Source: Forrester Research, Inc.



# Translating Data into Design

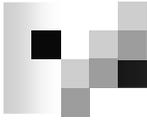
---

## Task List

- n Prioritize list of tasks by:
  - ⌘ Importance
  - ⌘ Frequency of Use
  - ⌘ Feasibility

Online Banking Tasks	Importance	Frequency	Feasibility
n To check account balances.			
n To transfer funds.			
n To pay bills.			
n To order checks.			
n To change address.			





# Translating Data into Design

---

## Task Matrix

n List of tasks by user

University Tasks	Prospective	Students	Alumni	Faculty
n To apply for admission.	X			
n To find a contact number.	X	X	X	X
n To register for classes.		X		
n To access course catalog.	X	X	X	X
n To donate money.			X	
n To request a transcript.		X	X	

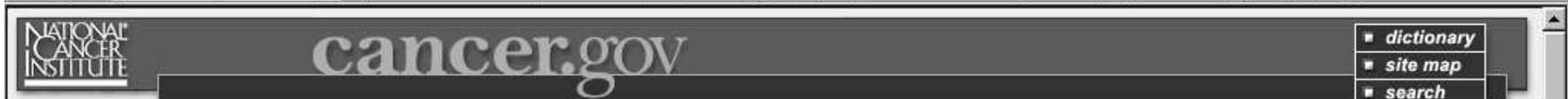


# Translating Data into Design

- n Use task matrix in conjunction with user profiles

NCI Tasks	Researchers	Physicians	Patients	Family
n To find health information.	X	X	X	X
n To apply for a clinical trial.			X	
n To apply for a grant.	X	X		

- n To Find Health Information
  - ⌘ Are researchers, physicians, patients, and family members all looking for the same health information?
  - ⌘ Need to consider user profile, including:
    - Relationship to organization
    - Knowledge level
    - Familiarity with topic



### Colon and Rectal Cancer Home Page

What You Need To Know About™ Cancer of the Colon and Rectum  
 Information about detection, symptoms, diagnosis, and treatment of colon and rectal cancer.  
 NIH Publication No. 03-1552  
[NIHSeniorHealth: Colorectal Cancer](#)  
 NIHSeniorHealth is a Web site that features authoritative and up-to-date health information in a format tailored to older adults.  
[PDQ® - NCI's Comprehensive Cancer Database](#)  
 Full description of the NCI PDQ database.

[Cancer Progress Report](#)

[Past Highlights](#)

[Press/NewsCenter](#)

**1-800-4-CANCER**  
 Cancer Information Service

**NCI Cancer Bulletin**  
 CLICK HERE TO SUBSCRIBE >>

**DIRECTOR'S CORNER**

- [Welcome](#)
- [Director's Update](#)

help

- [Cancer.gov Help](#)
- [FAQs](#)
- [Index of NCI Sites](#)

- Treatment**
  - Information about treatment, including surgery, chemotherapy, radiation therapy, immunotherapy, and vaccine therapy
  - Colon Cancer Treatment [patients] [health professionals]
  - Rectal Cancer Treatment [patients] [health professionals]
  - [Bevacizumab Improves Survival in Colorectal Cancer](#)
  - [More Information](#)

- Prevention, Genetics, Causes**
  - Information related to prevention, genetics, and risk factors
  - Colorectal Cancer Prevention [patients] [health professionals]
  - [Trials Show Aspirin Reduces Recurrence of Polyps](#)
  - [Genetics of Colorectal Cancer](#)
  - [More Information](#)

- Clinical Trials**
  - Information and current news about clinical trials and trial-related data
  - [Colon and Rectal Cancer Trial Results](#)
  - [Search for Clinical Trials](#)

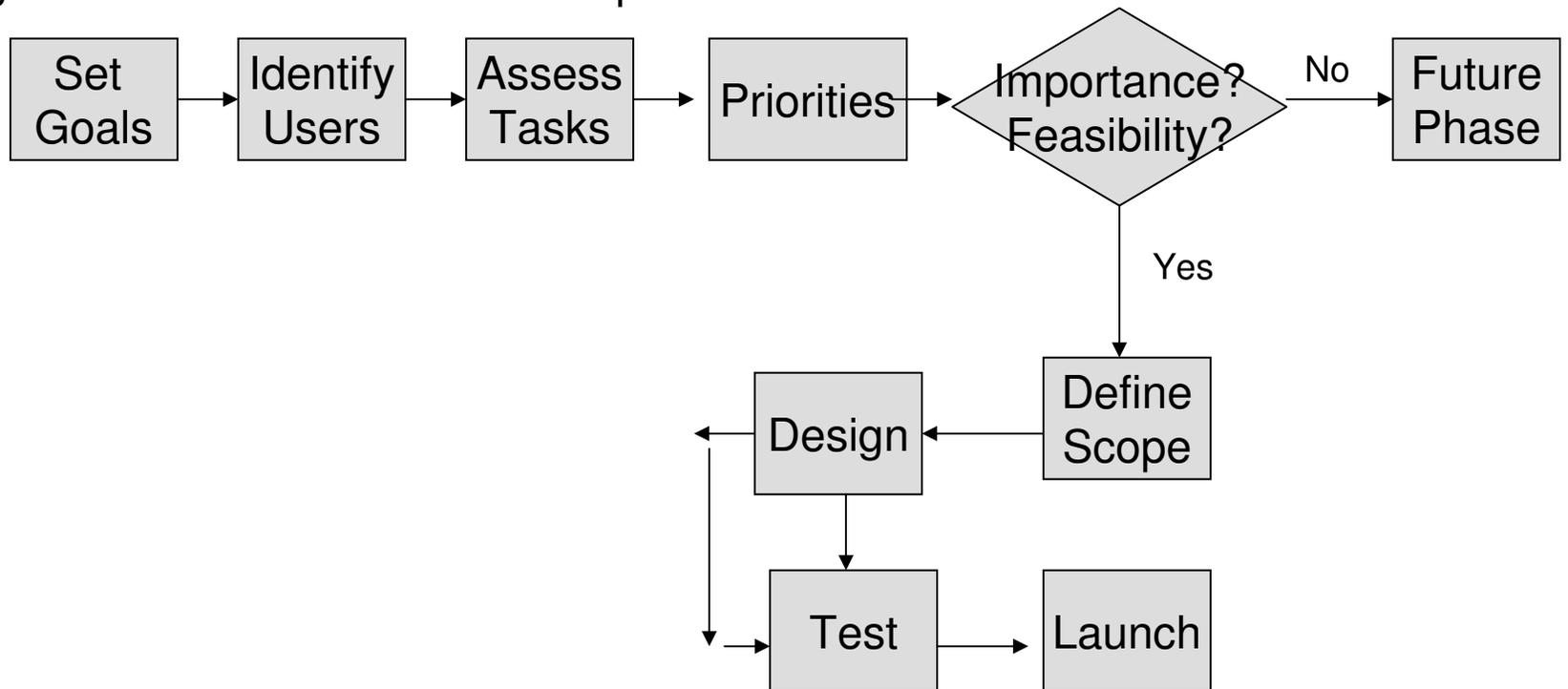
- Cancer Literature**
  - Resources available from the PubMed database
  - [Cancer Topic Searches: Gastrointestinal Cancers](#)
  - [Cancer Topic Searches: Cancer Genetics](#)
  - [Cancer Literature in PubMed](#)

- Research and Related Information**
  - Includes NCI-supported research, funding opportunities, and special reports
  - [Colorectal Cancer Research Funding Opportunities](#)
  - [Colon and Rectal Cancer Research Projects](#)
  - [Gastrointestinal \(GI\) SPOREs](#)

# Translating Data into Design

## Task Flow

n Diagram that shows tasks in order performed.





# Designing the Initial Prototype

---

- n Designing the Initial Prototype
  - ⌘ Content
  - ⌘ Information Architecture
  - ⌘ Graphic Design
  - ⌘ Programming & Accessibility



# Designing the Initial Prototype

---

## Writing for the Web

n More info:

- ✧ [www.useit.com/alertbox/9710a.html](http://www.useit.com/alertbox/9710a.html)
- ✧ [www.useit.com/papers/webwriting/rewriting.html](http://www.useit.com/papers/webwriting/rewriting.html)
- ✧ [www.webpagecontent.com](http://www.webpagecontent.com)
- ✧ [www.usability.gov/guidelines](http://www.usability.gov/guidelines)



# Designing the Initial Prototype

---

- n Information Architecture
  - α Defined as the organization of the content and tasks
- n How do users search for info?
  - α Known-Item
    - n Users know exactly what they are looking for.
    - n They know what it is called and that it exists.
    - n They just want to find it.
  - α Casual Browsing
    - n Users have an idea of what they are looking for.
    - n They may not know the right labels or what it is called.
    - n They may not know if the info even exists.



# Designing the Initial Prototype

---

## Card Sorting

### n What is it?

- ⌘ Technique that explores how users group items
- ⌘ Helps to develop structures that are logical to users
- ⌘ Maximizes probability of users finding info

### n Advantages/Disadvantages?

- ⌘ Easy and inexpensive
- ⌘ Helps to develop categories that are logical to users
- ⌘ Helps to identify items that need to be renamed
- ⌘ Helps with terminology
- ⌘ Sometimes difficult to analyze, tools have limitations



# Designing the Initial Prototype

---

## Card Sorting

n More info on Card Sorting:

- ⌘ <http://www.stcsig.org/usability/topics/cardsorting.html>
- ⌘ <http://iawiki.net/CardSorting>
- ⌘ <http://www-106.ibm.com/developerworks/edu/wa-dw-uscard-i.html>





# Designing the Initial Prototype

---

## Parallel Design

- n What is it?
  - ⌘ Process used to quickly create multiple iterations
  - ⌘ Incorporate the best elements from several designs
- n How to do it?
  - ⌘ Independently create a schematic of a page and/or function
  - ⌘ Schematics are displayed for everyone to observe
  - ⌘ Revise schematic to incorporate best elements from designs
- n Advantages/Disadvantages?
  - ⌘ Great brainstorming technique
  - ⌘ Ensures team considers multiple designs
  - ⌘ Can be time-consuming



# Designing the Initial Prototype

---

## Paper Prototyping

- n What is it?
  - ✧ Low-tech method that allows you to test early, before design and development
  - ✧ Paper drawings of pages
- n How to do it?
  - ✧ Participants are shown the paper prototype and given scenarios
  - ✧ Participants are asked to point to where they would click
- n Advantages/Disadvantages?
  - ✧ Helps to find problems early
  - ✧ Inexpensive, saves development time
  - ✧ Help determine affordance (does it look clickable)





# Designing the Initial Prototype

---

## Graphic Design

- ⌘ The graphic design should add a layer of usability, not reduce the usefulness of a solid information architecture.
- ⌘ Test design independently of content and navigation.
- ⌘ Use guidelines to assist.

**Step-by-Step Guide to Creating a Health Communication Program****Search****Plan & Set Goals**

- Setting objectives
- Creating a project plan & timeline
- Writing the communication plan

**Define Audiences**

- Segmenting audiences
- Considering gender, age & education
- Understanding culture, language & literacy

**Develop the Message**

- Brainstorming ideas & concepts
- Testing messages, readability & design
- Appealing to the audience

**Disseminate the Message**

- Developing & distributing materials
- Creating newsletters & brochures
- Using Internet, TV & radio

**Work with the Media**

- Developing news releases & media kits
- Holding press conferences
- Handling crisis communications

**Evaluate the Program**

- Setting evaluation goals
- Selecting methods for evaluation
- Revising your program

**Items to Consider  
Through Each Step****Research Methods**

- Focus groups & interviews
- Surveys & questionnaires

**Partnerships**

- Partnerships with organizations
- Coalition-building

**Frameworks, Models, Theory**

- Social Marketing
  - PRECEDE-PROCEED
- 

**Samples & Tools to Help You****Samples, Worksheets & Tools**

- communication plans & budgets
- creative briefs
- evaluation plans
- brochures, ads, radio spots
- focus group moderator's guide

**Case Studies**

- Doctor-patient communication
- Mammography and 55+ women
- Low-literacy campaigns

Cancer.gov

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History

Address

NATIONAL CANCER INSTITUTE **cancer.gov**

[home](#)  
[search](#)  
[site map](#)

[ABOUT THIS BOOK](#)   [GET A PRINT COPY](#)   [CONTACT US](#)   [PRIVACY POLICY](#)

# Making Health Communication Programs Work

This website is based on the book *Making Health Communication Programs Work*, first printed in 1989 by the Office of Cancer Communications (OCC, now the Office of Communications) of the National Cancer Institute (NCI).

INDEPTH SOLUTIONS TO COMMON QUESTIONS:  
 I want to...

## PLANNER'S GUIDE

### Overview

- Plan & Set Goals**
  - Assessing the health issue
  - Goals & objectives
  - Timeline & budget
- Define the Audience**
  - Target audience
  - Gender, age & education
  - Culture, language & literacy
- Develop Messages & Materials**
  - Ideas that appeal to your audience
  - Writing effective messages
  - Testing messages, readability & design
- Disseminate the Message**
  - Newsletters & brochures
  - Internet, TV, & radio
  - Community & interpersonal channels
  - Launching the program
- Work with the Media**
  - News releases & media kits
  - Press conferences
  - Crisis communications
- Evaluate & Refine the Program**
  - Selecting methods for evaluation
  - Planning for evaluation
  - Assessing the program & revising

### Research Methods

focus groups, interviews, surveys, mall intercepts, and more

### Frameworks, Models, Theory

social marketing, PRECEDE-PROCEED, and more

### Health Topics

breast cancer, lung cancer, colon cancer, and more

### Samples, Worksheets, Tools

focus groups, interviews, surveys, mall intercepts, and more

### Case Studies

focus groups, interviews, surveys, mall intercepts, and more

cancer.gov

NATIONAL INSTITUTE OF HEALTH

National Institutes of Health (NIH)

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES

FIRSTGOV  
Your First Click to the U.S. Government

Internet

Learn

Nostrud ex, velit iriure ullamc orper quis si, consequat tincidunt. Accumsan ea et quod velit illum volutpat suscipit duis dolor in uxor similis.

GO



Browse

Nostrud ex, velit iriure ullamc orper quis si, consequat tincidunt. Accumsan ea et quod velit illum volutpat suscipit duis dolor in uxor similis.

GO



Ask

Nostrud ex, velit iriure ullamc orper quis si, consequat tincidunt. Accumsan ea et quod velit illum volutpat suscipit duis dolor in uxor similis.

GO





# Designing the Initial Prototype

---

- n Accessibility
  - ⌘ Cannot be an afterthought
  - ⌘ Needs to be considered at the beginning of a project



# Usability Testing

---

## n **What is usability?**

### α Usefulness

n Degree to which users can successfully achieve goals

### α Effectiveness (ease of use)

n Ability of users to accomplish goals with speed & ease

### α Learnability

n Ability to operate the system to some defined level of competence after some predetermined amount/period of training

### α Satisfaction / Likeability

n Attitude of users, includes perceptions, feelings and opinions of the product

Booth, Paul. An Introduction to Human-Computer Interaction. London: Lawrence Erlbaum Associates, 1989.



U.S. General Services Administration



# Usability Testing

---

## Measures of Usability

- n **Effectiveness** (*Ability to successfully accomplish tasks*)
  - α Percentage of goals/tasks achieved (success rate)
  - α Number of errors
  
- n **Efficiency** (*Ability to accomplish tasks with speed and ease*)
  - α Time to complete a task
  - α Frequency of requests for help
  - α Number of times facilitator provides assistance
  - α Number of times user gives up



# Usability Testing

---

## Measures of Usability

- n **Satisfaction** (*Pleasing to users*)
  - ⌘ Positive and negative ratings on a satisfaction scale
  - ⌘ Percent of favorable comments to unfavorable comments
  - ⌘ Number of good vs. bad features recalled after test
  - ⌘ Number of users who would use the system again
  - ⌘ Number of times users express dissatisfaction or frustration
- n **Learnability** (*Ability to learn how to use site and remember it*)
  - ⌘ Ratio of successes to failures
  - ⌘ Number of features that can be recalled after the test



# Usability Testing

---

- n Planning
  - ⌘ Define goals
  - ⌘ Determine who will participate
  - ⌘ Select appropriate tasks
  - ⌘ Plan logistics
- n Conducting
  - ⌘ Assign roles
  - ⌘ Conduct test
  - ⌘ Collect data
- n Analyzing & implementing results
  - ⌘ Prioritize findings
  - ⌘ Implement and retest



# Usability Testing

---

**Usability objectives should be set at the beginning of the project!**

Two types of goals:

- α Performance
  - n What actually happened
- α Preference
  - n What participants thought



# Usability Testing

---

## Examples of Usability Objectives:

- ⌘ Two-thirds of test participants (6 of 9) will be able to complete x% of tasks in the time allotted.
- ⌘ Participants will be able to complete x% of tasks in 200% of developer's time.
- ⌘ Participants will be able to complete x% of tasks with no more than one error per task.
- ⌘ Two-thirds of test participants (6 of 9) will rate the system as highly usable on a scale of x to x.



# Usability Testing

---

- n Determine who will participate
  - α User profiles
    - n Match characteristics from user analysis
    - n Select representative group of users
  - α Selecting participants
    - n Recruiting – recruitment firms, databases, conferences
    - n Numbers – target numbers, floaters
    - n Schedule – allow recoup time
    - n Pre-Questionnaires – profile of participants
    - n Incentives – consent & payment form





# Usability Testing

---

## Select Appropriate Tasks

- n Focus on core tasks, prioritize by
  - α Frequency
  - α Importance
  - α Vulnerability
  - α Readiness
- n Ensure each task is measurable. Define success measures for each task.
  - α Include pathway information for observers
  - α List the items that should be recorded for each task so note-takers and observers record the appropriate information
- n Conduct a pilot test to look for give-away wording, confusing scenarios and to work on timing





# Usability Testing

---

## Create Scenarios

- n Avoid give-away wording
- n Make the first task simple
- n Give a goal, without describing steps
- n Use scenarios (short stories), not tasks
- n Ask participants to bring typical examples of their work



# Usability Testing

---

## Plan Logistics

- n Test location
  - ⌘ Lab, office, usability / market research facility
- n Prepare for observers
  - ⌘ One-way glass observation room
  - ⌘ Projected onto screen in adjoining room
- n Traffic flow of participants
- n Audio & video recording
  - ⌘ Value of highlight tape





# Usability Testing

---

## Plan Logistics

- n Materials needed
  - ⌘ Screening questionnaire
  - ⌘ Background questionnaire
  - ⌘ Pre- and Post-test questionnaires
  - ⌘ Video release form
  - ⌘ Incentive signature form
  - ⌘ Schedule
  - ⌘ Facilitator's guide
  - ⌘ Participants' scenarios
  - ⌘ Observers' scenarios (with pathways included)
  - ⌘ Data collection materials (with measurements defined)



# Usability Testing

---

## Facilitator's Role

- n Establish rapport
- n Listen more than you speak
- n Ask questions neutrally
- n Have a clear understanding of goals and critical issues
- n Use open-ended questions
- n Do not lead the participant
- n Do not put words into the participant's mouth
- n Watch your body language





# Usability Testing

---

## Collecting data

- n Performance
  - α Objective (*what actually happened*)
  - α Usually Quantitative
    - n Time to complete a task
    - n Time to recover from an error
    - n Number of errors
    - n Percentage of tasks completed successfully
    - n Number of clicks
    - n Pathway information



# Usability Testing

---

## Collecting data

- n **Preference**

- α Subjective (*what participants thought*)
- α Usually Qualitative
  - n Preference of versions
  - n Suggestions and comments
  - n Ratings or rankings (*can be quantitative*)





# Usability Testing

---

## Collecting data

- n **Observation** – What actually happened
- n **Inference** – What you think it means
- n **User Comments** – What the participants actually says
  
- n Important to distinguish between these



# Usability Testing

---

## Analyzing the data

- n Quantitative data
  - ⌘ Statistics (number of clicks, errors rate, time, etc.)
  - ⌘ Look for trends
- n Qualitative data
  - ⌘ Attitude, comments



# Usability Testing

---

## Prioritize findings

- n Usability goals met?
  - α Prioritize tasks that performed the worst according to goals
  - α Prioritize findings by frequency / importance
  - α Prioritize recommendations by feasibility



# Usability Testing

---

## **Report findings and recommendations**

- n Make report usable for *your* users
- n Include quantitative data (success rates, times, etc.)
- n Avoid words like “few, many, several”. Include counts
- n Use quotes
- n Use screenshots
- n Mention positive findings
- n Do not use participant names, use P1, P2, P3, etc.
- n Include recommendations
- n Make it short

## **Implement and retest!**





No tagline

- SEARCH
- NEWS
- AGENCIES
- OPPORTUNITIES
- ABOUT US
- RELATED SITES

1-877-696-6775  
200 INDEPENDENCE AVE SW  
WASHINGTON DC 20201

Help Us Improve This Site

Get Information On: [A-Z](#) or



Latest Headlines:

- > [HHS Awards More Than \\$8.4 Million in Grants to Address Nation's Nursing Shortage](#)
- > [HHS Secretary Thompson Forges Partnership with America's Nurses to Enhance Public Health Preparedness](#)
- > [Secretary Thompson Urges Congress to Pass President's Plan to Assist Uninsured](#)

SPOTLIGHT ON  
**West Nile Virus Information**



**DISCLAIMERS** | **PRIVACY NOTICE** | **FOR KIDS** | **FOIA** | **CONTACT US**

Last revised: September 30, 2002

The A-Z link was overshadowed by the text before it and the drop-down after it.

Only about 35 topics were available through this drop-down.

Users thought the picture links were sponsors.

Search was a button with no box for typing search terms.

All the content is at agency sites. To get to it, users had to pick the right agency from the descriptions on the page this leads to.

The center of the screen was taken up by news items, not the major topics users were looking for.

- **Diseases & Conditions**
  - Heart Disease, Cancer, HIV/AIDS, Diabetes...
  - Mental Health
  - Treatment, Prevention, Genetics
  - Clinical Trials
  - Addictions, Substance Abuse
- **Safety & Wellness**
  - Eating right
  - Exercise, Fitness
  - Safety Tips and Programs
  - Smoking, Drinking
  - Traveler's Health
- **Drug & Food Information**
  - Drugs, Dietary Supplements
  - Food Safety
- **Families & Children**
  - Medicaid, other health insurance
  - Child Support, Child Care, Adoption
  - Domestic Violence, Child Abuse
  - Vaccines
- **Aging**
  - Medicare
  - Health Issues
  - Coping and Caring
- **Specific Populations**
  - Women, Men, Children, Seniors
  - Disabilities
  - Racial and Ethnic Minorities
  - Homeless
- **Resource Locators**

News 3:05 PM Wed, Sept 03

- **West Nile Virus**
- **September 2, 2003** — HHS Provides \$1.4 Billion More to States and Hospitals for Terrorism Preparedness [Full Story](#)
- **August 28, 2003** — HHS Approves Illinois Plan to Expand Coverage to an Estimated 20,000 Uninsured Children [Full Story](#)
- **All HHS News**

**Features**

- [Privacy of Health Information/HIPAA](#)
- [Improving Head Start](#)

Separates and visually distinguishes the search function.

Displays time-critical and/or sensitive information prominently in the right panel.

Displays information topics openly – they are immediately visible and available to the user, not buried in a drop-down list or in an alphabetized resource list as on the original HHS homepage.

Establishes HHS as a 'brand' by presenting the breadth of the Department's activities and products – health AND human services – on the portal pages.



# HHS Site: Baseline vs. Redesign Comparison

Scenario Text	Success Rate	
	Baseline Test	Final Prototype
You want to find a nursing home for a relative.	38%	88%
You want to know what diabetes is and how you can prevent it.	73%	94%
You want to know what housing organizations are available to help assist the homeless in your area.	13%	94%
You want to know what the Fiscal Year 2001 budget for HHS was.	71%	94%
Your cousin is considering a career in medical research and asked you if HHS offers financial aid to undergraduate students.	8%	88%
<b>Average success rate</b>	<b>41%</b>	<b>92%</b>



# Other Evaluation Methods

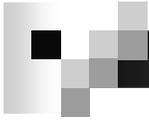
---

## Heuristic Evaluation

- n What is it?
  - ⌘ Expert review of web site based on established guidelines
- n How do you do it?
  - ⌘ Conducted by usability expert (best to include multiple reviewers)
  - ⌘ Experts review site for compliance with established principles
- n Advantages/Disadvantages?
  - ⌘ Provides a reference of issues to be tested
  - ⌘ Subjective, not real users
  - ⌘ Not always accurate, identifies false positives
- n 50% False Alarms, 20% Misses, 50% Hits

(Catani and Biers, 1998, Rooden, Green and Kanis, 1999, Stanton and Stevenage, 1998, Spencer, 2000, Jacobsen and John, 2000)



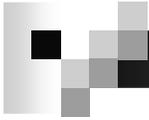


# Refine

---

- n Most important step is to refine....
  - ⌘ Test
  - ⌘ Refine
  - ⌘ Test
  - ⌘ Refine....





# Federal Usability Resources

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- n Many usability resources and training are available.
- n YOU can add to those resources.



# Usability.gov

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n **<http://usability.gov>**

n **Website to help increase the usability of Federal websites and online applications**

n Includes usability basics, methodology, tools, resources, lessons learned, and more

n Built for Federal web/communication technology developers but available to anyone

n Currently undergoing redesign

n Cosponsored by the U. S. Department of Health and Human Services (HHS) and GSA





# Research-based Web Usability

---

- n **Research-based Web Design and Usability Guidelines (2003)**
- n 187 guidelines based on research in usability, user interfaces, human factors
- n Peer-reviewed by usability experts, usability researchers, and website developers/designers
- n PDF available on <http://usability.gov> (web version coming soon), Book available on amazon
- n Update in process
- n Cosponsored by HHS and GSA

# Research-Based Web Design & Usability Guidelines

Provided by NCI: National Cancer Institute

[Home](#)

[Dictionary](#)

[Usability.gov](#)

Current Research-Based Web Design and Usability Guidelines from the Field to determine design research and its related credibility

[Introduction/  
How to use this site](#)

## Web Site Design

- [Web site goals](#)
- [Initial design ideas](#)
- [Workload allocation](#)
- [Iterative design](#)
- [Overall consistency](#)
- [User feedback](#)
- [Logos](#)
- [Breadth vs. depth](#)
- [Maximum page size](#)
- [Performance and/or preference goals](#)
- [Location consistency](#)
- [Frames](#)

## Content/Content Organization

- [Content](#)
- [Sentence/paragraph length](#)
- ["Print only" pages](#)

## Page Length

- [Short pages](#)
- [Long pages](#)
- [Scrolling issues](#)
- [Scrolling vs. paging](#)

## Page Layout

- [Alignment](#)
- [Arrangement of information](#)
- [Level of importance](#)
- [Location consistency](#)
- [Page density/white space](#)
- [Top to bottom searching](#)
- [Information placement](#)
- [Use of information/format](#)
- [Scrolling issues](#)

## Font/Text Size

- [Font size and style](#)
- [Font types](#)

## Titles/Headers

- [Titles](#)
- [Headers](#)

## Reading Time/ Scanning

- [Reading time/scanning](#)
- [Scanning vs. reading](#)
- [Scrolling vs. paging](#)
- [Text scanning](#)

## Links

- [Link placement](#)
- [Link presentation](#)
- [Link expectations](#)
- [Link labels](#)
- [Mine sweeping](#)
- [Text vs. image links](#)
- [Mouse overs](#)
- [Redundant text links](#)
- [Tabs](#)
- [Used links](#)

## Graphics

- [Graphics](#)
- [Graphics as links](#)
- [Graphics and searching](#)

## Navigation

- [Familiarity of navigational aids](#)
- [Navigational aids \(text vs. graphics\)](#)
- [Navigation elements](#)
- [Navigation bar placement](#)

## Search

- [Search engines](#)
- [Search scope](#)
- [Text scanning](#)

## Software/Hardware

- [Connection speed](#)
- [Downloading time](#)
- [Monitor size](#)
- [Screen resolution](#)

## Accessibility

- [Color](#)
- [Device independence](#)
- [Alternative formats](#)
- [Redundant text links](#)
- [User-controlled content](#)



# Usability University

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- n **Free seminars and low-cost courses on usability topics primarily held in Washington, DC area**
- n Spring 04 – 387 Federal staff/contractors representing more than 30 agencies attended
- n Cosponsored by GSA & HHS
- n **Spring 2005 schedule**

**Courses:**

<http://usability.gov/usabilityuniversity/training.htm>

**Seminars:**

<http://usability.gov/usabilityuniversity/seminar.htm>



# U-Group e-newsletter

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n **GSA e-newsletter on usability topics**

n To subscribe:

Send email to [listserv@listserv.gsa.gov](mailto:listserv@listserv.gsa.gov) and type the following command in the body of message:       subscribe u-group

n September, 2004 Issue – Older Users and the Web

n <http://www.gsa.gov/u-group>





# Usability Testing Environment (UTE) Tool

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- n **Automated tool that collects quantitative and qualitative data generated in usability testing**
- n Will provide easier, more accurate, and quantitative reporting of website usability performance and preference data
- n Beta version in testing now, will be available to all Federal web/application developers
- n Cosponsored by GSA, IRS, NRC, HHS, NIST IUSR Project



# STEP508 Accessibility Tool

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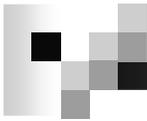
- n **Accessibility prioritization tool that takes results of accessibility evaluation tools (Bobby, LIFT, WebKing, etc.) and prioritizes the accessibility errors**
- n Helps developers assess current state of accessibility of website, prioritize the accessibility problems to fix, and track progress in fixing accessibility errors over time
- n Free download from <http://section508.gov/step>
- n Cosponsored by GSA and HHS



# Usability Organizations

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- § **Usability Professionals Association (UPA)**  
<http://usabilityprofessionals.org>
- § **Society for Technical Communication (STC)**  
<http://stc.org>
- § **Human Factors and Ergonomics Society (HFES)**  
<http://hfes.org>
- § **Association for Computing Machinery/SIGchi**  
<http://acm.org>

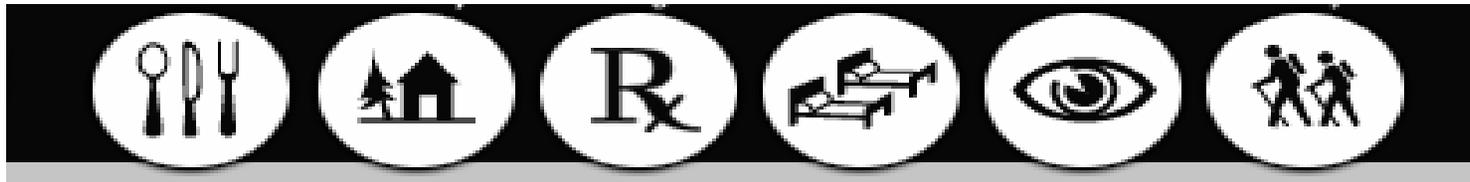


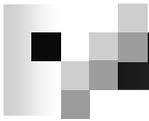
Importance ●●●●●

Evidence ●●●○○

Sources: 6

## 2:1 Display Information in a Directly Usable Format



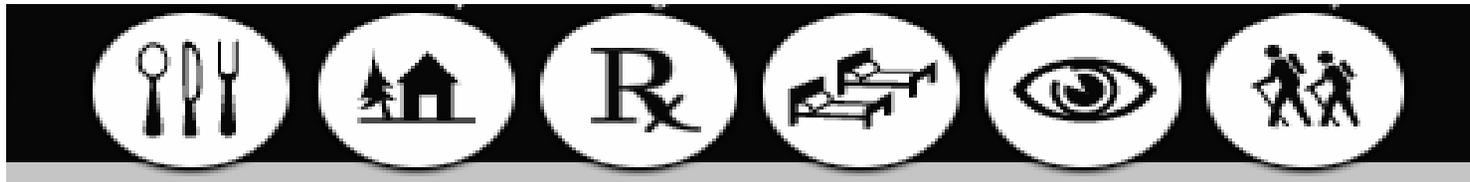


Importance ●●●●●

Evidence ●●●○○

Sources: 6

## 2:1 Display Information in a Directly Usable Format



Diet Family Drugs Sex Mind Body



Previous



Next



Home



Search



Help



# Contact

---

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# What Is Usability?

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- n **Usefulness**

- ⌘ Degree to which users can successfully achieve goals/complete tasks

- n **Effectiveness**

- ⌘ Ability of users to accomplish goals with speed & ease

- n **Learnability**

- ⌘ Ability to operate the system to some defined level of competence after some predetermined amount of training

- n **Satisfaction**

- ⌘ Attitude of users, including perceptions, feelings and opinions of the product



# What Is Usability Engineering?

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- n An evidence-based methodology that involves end users throughout the development process to produce information systems that are measurably easier to use, learn, and remember
- n Usability Engineering involves:
  - ✧ Collecting data about users' needs/wants/behaviors
  - ✧ Developing prototypes
  - ✧ Evaluating the prototypes
  - ✧ Designing and testing iteratively



# Usability Engineering is NOT

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- n Usability testing just before deployment
- n Simply applying guidelines during design
- n Conducting evaluations without incorporating recommendations
- n Any individual usability method on its own



# Other Terms to Know

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- n User-Centered Design
- n Ergonomics
- n User Interface Design
- n Human-Computer Interaction
- n Human Factors
- n Engineering Psychology



# Fitting UE into Development

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- n It's easy!
- n A trained Usability Professional can work within the project schedule.
- n There are different methods for different phases of development.
- n It can save time and money by preventing significant investment in poor designs.



# Sample Usability Methods

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- n User and Task Analyses
- n “Contextual Inquiry”
  - Observations of users in their natural setting
- n Focus Groups
- n Interviews
- n Expert Reviews
- n Usability Tests



# Strategies for Success

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## n For Management

- ⌘ Gain support of Sr. Management and Project Leaders.
- ⌘ Use an iterative development process.
- ⌘ Include usability throughout a project, not just at the end.
- ⌘ Work with trained usability professionals.
- ⌘ Encourage information sharing (esp. “marketing” type groups with access to user information)



# Strategies for Success

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- n For Usability Professionals
  - ⌘ Start with a small usability effort.
  - ⌘ Identify solutions, not just problems.
    - n Consider limitations when recommending solutions
  - ⌘ Consider all user populations.
  - ⌘ Participate as an equal team member, not a consultant.
  - ⌘ Have team members watch usability tests.
  - ⌘ Address all components, including manuals & training.